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UPPER SILESIA

IN ITS ECONOMIC RELATION TO POLAND AND GERMANY

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FOREWORD

In the preparation of this statement concerning the economic relations of Upper Silesia with Poland and with Germany, a particular effort has been made to present the material in a statistical form.

Figures are given covering the output of coal, iron and zinc in Upper Silesia and the consumption of Upper Silesian products in Poland and Germany. Similarly, figures are given concerning the consumption of imported foodstuffs, raw materials and manufactured goods in Upper Silesia.

In compiling these figures every effort has been made to employ only reliable statistics, compiled either by various government officials or by the research departments of technical and industrial establishments. Among the sources used are the following:

German Government Report of Merchandise Shipments on Railways.
Report of Upper Silesian Coal Shipments.
Report of the Mining Industry of Austria.
Statistical Year Book of Congress Poland.
Report of the Western Russian Mining Districts.
Mining and Metallurgical Review.
Quarterly Statistics of the German Empire.
Report on the Upper Silesian Mining and Metallurgical Industry.
Mining and Metallurgical Industry in Congress Poland.
Handbook of Upper Silesian Industry.
Year Book of the Breslau Mining District.
Commercial Balance of Former German Poland (A. Rose).

Throughout the body of this report notations are made indicating which of these sources were used for the particular statistics presented.

This statement is based entirely upon economical considerations, political reasons for the union of Upper Silesia and Poland not being resorted to. Germany bases her whole case on the economic necessity of retaining control over Upper Silesia.

—THE EDITORS.

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Upper Silesia in its Economic Relation to Poland and Germany

It is frequently stated in certain economic circles that the economic relations of Germany and Upper Silesia are so closely interwoven that separation would bring about the economic ruin of Upper Silesia and would influence unfavorably Germany's ability to pay the Allied Powers the reparations which have been demanded under the terms of the Treaty of Versailles. Among others, Mr. J. M. Keynes, in his book, "The Economic Consequences of the Peace," has taken this view. According to popular opinion, based on misinformation, Upper Silesia is connected with Poland only in a very loose way and means to Poland only an additional source of wealth, and is not essential to the economic existence of Poland.

This opinion is based on the lack of even such elementary information as the territorial extent of present-day Poland. For instance, Mr. Keynes states in his book (page 79) that Poland in the year 1913 consumed 10,500,000 tons of coal, of which 6,800,000 tons were supplied by coal fields located in the territory definitely assigned to Poland, whereas Upper Silesia supplied, according to the same authority, only 1,500,000 tons. We have found it impossible to ascertain from what sources the figure of 10,5000,000 tons was taken. It is less than half of the real consumption of Poland in that year. The figure of 6,800,000 tons, given by Mr. Keynes, represents the production of the Dombrowa Basin, the Krakow Basin not being taken into consideration. The figure of 1,500,000 tons represents the imports during that year of Upper Silesian coal to the former Congress Poland only. The importation of coal from Upper Silesia to all the territories which have now been united into the Polish state was five times as great as the figure thus given.

If we study more closely the Upper Silesian industry and its relation to Germany and to Poland, we find, on the contrary, that for Germany Upper Silesia would mean only a source of greater wealth, whereas for Poland it is a fundamental basis of economic existence. Germany without Upper Silesian coal will be not only able to cover her entire demands, but will have considerable coal for exportation, whereas Poland cannot exist without the Upper Silesian coal. The Upper Silesian iron industry does not play any great role in the total balance of Germany; its significance for Germany has been decreasing from year to year. The natural markets for this industry were the Polish provinces, from the largest of which Upper Silesia was cut off by customs boundaries which hampered the development of the Upper Silesian iron industry.

On the other hand, territories belonging to the present Polish state are

for Upper Silesia sources of raw materials (such as iron ore and wood) and of food which Germany is not able to supply to Upper Silesia.

The above statements may be proved by figures relating to the most important branches of Upper Silesian industry, and by showing the relations of this industry to Poland on one hand and Germany on the other. First in importance is coal.

Coal

The territories included in Poland as at present constituted consumed 19,445,000 tons of coal in 1913. Though no inconsiderable amount of this coal was obtained from Polish mines, the greater portion was imported from outside the present boundaries of Poland. Of the total consumption, 10,488,000 tons were imported and 8,957,000 tons produced within the country.

Of the coal produced in mines belonging now to Poland, Dombrowa coal was consumed almost exclusively in Congress Poland and the coal from the Cracow Basin in Galicia. The Ostrau-Karwin imported coke was used

Consumption of Coal in Poland—I*

I—PIT COAL

	Tons	Tons.
Former Congress Poland		
Pit coal	7,438,000	
Coke 603,000 tons, equivalent to	861,000*	
		8,299,000
Galicia		
Pit coal	4,163,000	
Coke 62,900 tons, equivalent to coal	90,000	
		4,253,000
Poznania		
Pit coal	2,518,000	
Coke 55,900 tons equivalent to coal	80,000	
		2,598,000
Polish West Prussia and Danzig		
Pit coal	1,480,000	
Coke 40,000 tons, equivalent to coal	57,000	
		1,537,000
Polish Teschen		
Pit coal	851,000	
Coke 8,000 tons, equivalent to coal	11,000	
		862,000
Former Russian Poland East of Congress Poland		
Pit coal	1,620,000	
Coke 6,000 tons, equivalent to coal	9,000	
		1,629,000
Total		19,178,000
Total—Pit coal	18,070,000	
Coke 776,000 tons, equivalent to coal	1,108,000	
		19,178,000

*Throughout this statement coke has been converted into coal at the ratio of 10 tons of coal to 7 tons of coke; and brown coal brickets into brown coal by multiplying by three, because the caloric value of one ton of brickets corresponds on the average to three tons of brown coal. (These ratios were fixed by the International Coal Commissions.)

***German Government Report of Merchandise Shipments on German Railways.**
Report of Upper Silesia Coal Shipments.
Report of Mining Industry in Austria.
Statistical Year Book of Congress Poland.
Report of the Western Russian Mining District.
Mining and Metallurgical Review.

11—BROWN COAL

	Tons	Tons
Congress Poland		
Brown Coal	155,000	
Brown coal brickets 400 tons, equivalent to brown coal..	1,200	
		156,000
Galicia		
Brown coal		37,000
Poznania		
Brown coal	30,600	
Brown coal brickets 161,200 tons, equiv. to brown coal.	483,600	
		514,000
Polish West Prussia and Danzig		
Brown coal brickets 61,200 tons, equiv. to brown coal..		184,000
Total		891,000
Total—Brown coal	223,000	
Brown coal brickets 222,800 tons, equiv. to brown coal	668,000	
Total	891,000	
Grand Total—Pit coal	19,178,000	
Brown coal 891,000 tons, equivalent to pit coal	267,000	
		19,445,000

mostly in Congress Poland, whereas the coal from Ostrau-Karwin was consumed mostly in Galicia.

Consumption of Upper Silesian Coal in Poland

A study of the distribution of Upper Silesian coal and coke among the different Polish provinces in 1913 shows that every region in Poland was partly dependent upon coal from Upper Silesia, the three districts consuming the greatest quantities being Posnania, 2,464,125 tons; Galicia, 1,962,000 tons and Congress Poland, 1,524,943 tons. (See table, page 6.)

It must be mentioned that the data regarding the importation from Upper Silesia to Congress Poland, Galicia, Posnania and Polish West Prussia have been co-ordinated with the figures of German experts. With regard to importation of Upper Silesian coal to Danzig, Polish Teschen and former Russian Poland, east of Congress Poland, the figures have been calculated on the only basis that is just, viz.: on the basis of the German railway statistics showing how many tons of coal, coke and brickets were shipped from Upper Silesia to each separate station of destination (according to "Uebersicht uber den Oberschlesischen Steinkohlen Versand, getrennt nach Steinkohle, Briketts und Koks nach den Eizelnen Stationen des In-und Auslandes," 1913). On the German side objections have been made against adopting this method for the Polish Teschen, on the ground that some of the coal sent to stations in Polish Teschen was reshipped from those stations to other destinations. The German experts are not able, however, to confirm this argument by any concrete evidence. Even if we admit that a part of the Upper Silesian coal shipped to Polish Teschen was really reshipped outside

Consumption of Upper Silesian Coal in Poland

The distribution of Upper Silesian coal and coke among the different Polish provinces in 1913 is given by the following table:

	Tons	Tons
Congress Poland		
Coal	1,203,555	
Coke 224,972 tons, equivalent to coal	321,388	
		1,524,943
Galicia		
Coal	1,860,515	
Coke 57,602 tons, equivalent to coal	82,288	
		1,962,803
Poznania		
Coal	2,416,121	
Coke 33,603 tons, equivalent to coal	48,004	
		2,464,125
Polish Western Prussia		
Coal	748,134	
Coke 12,924 tons, equivalent to coal	18,463	
		766,597
Danzig		
Coal	415,000	
Coke 7,000 tons, equivalent to coal	10,000	
		425,000
Polish Teschen		
Coal	611,035	
Coke 1,857 tons, equivalent to coal	2,653	
		613,688
Former Russian Poland East of Congress Poland		
Coal	95,385	
Coke 700 tons, equivalent to coal	1,000	
		96,385
Total		7,853,541
Total—Coal	7,369,745	
Total—Coke (338,658 tons), equivalent to coal.	483,796	
		7,853,541

(Brickets on account of the very small quantity are not shown in separate column, but are included in the coal figures).

present Polish boundaries, the quantity of this coal could only have been very small.

If we compare the figures of Upper Silesian coal shipments to Poland with figures of the total consumption of coal and coke in Poland, we find that the consumption of Upper Silesian coal amounted in 1913 to 40.4 per cent. of the total consumption in Poland; this proportion was for Congress Poland 18 per cent., for Galicia nearly 50 per cent. and for former German Poland nearly the whole pre-war consumption, 90 per cent. being covered by coal and coke from Upper Silesia.

Of the total production of Upper Silesia which amounted in 1913 to 43,-

170,000 tons, the shipments to what is now Poland were 18.2 per cent., and of the total railway shipments to points outside of Upper Silesia they were 29 per cent.

It being evident from these figures that coal from Upper Silesia is a fundamental item in the Polish coal supply, it is next essential that we study the relative importance of Upper Silesian coal for Germany.

Origin of Coal Consumed in Poland

I—PIT COAL		
A—Black Coal	Tons	Tons
Production of Dombrow Basin		6,834,000
Production of Krakow Basin		1,971,000
Production of Mine "Silesia" in Polish Teschen		184,000
Total home production		8,989,000
Importation from Upper Silesia	7,370,000	
Importation from Germany	186,000	
Importation from Ostrau-Karwin Basin	463,000	
Importation from Donetz Basin	1,000,000	
Importation from other coal basins	160,000	
		9,179,000
		18,168,000
Less exportation from Krakow District	23,000	
Less exportation from mine "Silesia"	75,000	
		98,000
		18,070,000
B—Coke—		
Importation from Ostrau-Karwin District	338,000	
Importation from Upper Silesia	339,000	
Importation from Germany	96,000	
Importation from Donetz	3,000	
Equivalent to coal	776,000	1,108,000
Total		19,178,000
II—BROWN COAL		
A—Brown Coal		
Production in Congress Poland	155,000	
Production in Galicia	37,400	
Production in Poznania	25,000	
Total Home Production		217,400
Importation from Germany		5,600
		223,000
B—Brown Coal Brickets		
Importation from Germany 222,800 tons, equivalent to brown coal		668,000
		891,000
Grand Total pit coal		19,178,000
Brown coal 891,000 tons, equivalent to pit coal		267,000
		19,445,000

Total Consumption in Germany*

The total production of pit coal in Germany, including Upper Silesia, Alsace-Lorraine and the Saar Basin, amounted in 1913 to 190,109,440 tons.

Importation of coal to Germany was as follows:

	Tons
1—Pit coal	10,540,069
2—Pit coal brickets	27,272
3—Coke 594,501, equivalent to coal	849,287
Total imports	11,416,628
Total imports and production	201,526,068

Exportation of coal from Germany was as follows:

	Tons
1—Pit coal	34,598,408
2—Pit coal brickets	2,302,602
3—Coke 6,432,986, equivalent to coal	9,189,980
Total exports	46,090,990

The total consumption in 1913 of pit coal and coke in Germany within her frontiers of 1913 was, therefore, 155,435,078 tons.

In order to obtain the consumption of pit coal and coke in 1913 in Germany within her present boundaries we must, from the above figures of 155,435,078 tons, deduct the consumption in 1913 of those territories which, according to the Peace Treaty, have been cut off from Germany

The consumption of pit coal in these territories amounted to:

	Tons
Alsace-Lorraine	11,131,000
Saar Basin	5,800,000
Schleswig-Holstein—Eupen Malmedy	600,000
Posnania	2,598,000
Polish West Prussia and Danzig	1,537,000
Luxemburg	3,860,000
Total	25,226,000

To this must be added part of the pre-war consumption of coal by the Germany navy and merchant marine and by the munitions industry, which consumption is now reduced at least by 3,000,000 tons, and (if Upper Silesia is united with Poland) the consumption of pit coal in Upper Silesia, which amounted in 1913 to 14,012,000 tons, making a total of 42,538,000 tons.

From the above it follows that the pre-war consumption of pit coal and coke in Germany within her present boundaries and excluding Upper Silesia amounted to 155,435,078 tons, less 42,538,000 tons, or a total of 112,897,078 tons.

The consumption of brown coal in Germany in 1913 is shown by the following figures:

	Tons	Tons
German production		87,233,084
Importation to Germany:		
1—Brown coal	6,987,064	
2—Brown coal brickets, 120,965, equiv. to	362,895	
		7,349,959
		94,583,043
Less Export from Germany:		Tons
1—Brown coal		60,345
2—Brown coal brickets 861,135, equiv. to brown coal		2,583,405
		2,643,750

The consumption of brown coal in 1913 in Germany within its former boundaries amounted therefore to 91,939,293 tons.

For consumption of brown coal within territories cut off from Germany

*Quarterly Statistics of the German Empire.

1,300,000 is deducted. The consumption of brown coal in 1913 in Germany within her present boundaries is thus 90,639,293 tons, which is equal to 27,191,788 tons of pit coal. The total consumption of coal in 1913 in Germany within her present boundaries amounted therefore to:

	Tons
Pit coal	112,897,078
Brown coal, equiv. to pit coal	27,191,788
Total	140,088,866

According to the Versailles Treaty Germany has lost her coal basins in Alsace-Lorraine and in the Saar Basin, which produced in 1913: Alsace-Lorraine, 3,817,000 tons; Saar Basin, 12,223,000 tons, or a total of 16,040,000 tons.

If Germany loses Upper Silesia, this figure will be increased by the production of Upper Silesia, 43,170,000 tons, or a total loss of 59,210,000 tons.

If we deduct from the total production of pit coal in Germany, which as we have shown above amounted in 1913 to 190,109,440 tons, the production of coal basins which Germany has lost already and of Upper Silesia, 59,210,000 tons, there remains 130,899,440 tons as the pre-war production of pit coal in basins which will belong to Germany as at present constituted.

Present Supplies of Coal Available for Germany

According to the data at hand the present production of pit coal in Germany amounts to 78 per cent. of the pre-war production; the present production of pit coal basins belonging to present-day Germany would therefore amount to 102,100,000 tons. With regard to brown coal, its production in Germany from the beginning of the war not only did not decrease, but on the contrary, it even increased considerably and amounts now yearly to about 100,000,000 tons, which corresponds to 30,000,000 tons of pit coal. The total present production in Germany of pit coal and brown coal expressed in pit coal amounts thus to 132,100,000 tons. To this must be added the importation to Germany of coal from Upper Silesia, amounting during the first six months of the year 1920 to about 1,000,000 tons monthly, or yearly, 12,000,000 tons. Germany, therefore, has altogether at her disposal:

	Tons
Pit coal of her own production	102,100,000
Brown coal of her own production 100,000,000, equiv. to pit coal	30,000,000
Upper Silesian coal	12,000,000
Total	144,100,000

If from this amount we deduct deliveries of coal by Germany to the Allies in accordance with the Peace Treaty, and amounting at the present time according to the Spa conference to 2,000,000 tons monthly, or 24,000,000 yearly, there remains for the interior consumption of Germany 120,100,000 tons, or nearly 86 per cent. of Germany's pre-war consumption, which amounted as shown above to 140,086,866 tons. It must be added that consumption of coal in Polish territories, since the reconstruction of the Polish State, that is during the years 1919 and 1920, has not even during one month amounted to more than 50 or 55 per cent. of the pre-war consumption. Very few of the Western European countries working under the relatively best economic conditions can cover as high a proportion of their pre-war requirements as Germany does, 86 per cent.

If Germany brings her production of pit coal to the pre-war level, that is to 130,899,000 tons, and adds thereto 100,000,000 tons of brown coal (equal to 30,000,0000 tons pit coal), and the importation from Upper Silesia, which at the present rate, is amounting annually to 12,000,000 tons, the total amount at the disposal of Germany will be 172,899,000 tons. This is an amount which will allow Germany, not only to fully cover her requirements at the pre-war rate (140,088,866 tons) and fulfill her obligations to the Allied Powers, but will even allow her to export a considerable amount of coal.

Let us make a further comparison between the consumption in 1913 of Upper Silesia of coal, and the total consumption of coal and coke in Germany within her present boundaries.

In 1913 the consumption of Upper Silesian coal and coke in Germany (not counting Upper Silesia itself), amounted to:

		Tons
Shipment by rail:		
Coal		13,468,699
Brickets		107,624
Coke 194,287 tons, equivalent to coal		277,553
Total		13,853,876
Shipments by water		2,265,801
Total		16,119,677
Less shipments to territories:		
Ceded to Poland	3,230,722	
To Danzig	425,000	
Total		3,655,722
Net total		12,463,955

This means that the consumption of Upper Silesian coal and coke in Germany within her present boundaries amounted altogether to only 12,463,955 tons. This makes only 8.9 per cent. of the total pre-war coal consumption in Germany (140,088,866 tons), whereas, as we have seen above, Upper Silesian coal represented 40.4 per cent. of Poland's total pre-war consumption.

From the above we can see plainly that the possession of Upper Silesian mines is not necessary to enable Germany to meet her coal requirements. Germany, despite the loss of the Saar Basin and Alsace Lorraine, will not only be able even without Upper Silesia to cover fully her interior requirements, but will also have considerable quantities of coal for exportation. The statement of Germany that, if she loses Upper Silesia, she will not be able to fulfill her coal obligations toward the Allied Powers, is quite unfounded. Undoubtedly the Upper Silesian coal means for Germany a source of wealth, but it is not in any sense the basis of economic existence for Germany.

Importance of Upper Silesian Coal for Poland

The situation for Poland is quite different. The Dombrowa and Krakow coal basins can cover less than half of Poland's requirements, and Poland is bound to cover her deficiency with Upper Silesian coal. To this must be added the fact that neither the Dombrowa nor the Krakow Basins produce coking coal. Metallurgical coke, now that the Teschen question has been settled to Poland's disadvantage, can be supplied to Polish iron works only by Upper Silesia. If the Upper Silesian coal basin remains outside the Polish boundaries, Poland will be always dependent on her neighbors with regard to fuel. Thus the possession of the Upper Silesian mines is for Poland the first condition of economic independence.

Finally, it must be taken into consideration that the economic life of the Polish territories during the last century, because they were divided by customs frontiers and attached to three different foreign economic organizations, has developed under quite abnormal conditions. The governments of the states which participated in the partition of Poland, in their centralistic tendencies, always supported the industry and commerce of the provinces inhabited by their own predominant nationalities to the disadvantage of the sections of Poland belonging to them. Hence the customs duties and tariffs so detrimental to the Polish industry; hence the entire indifference of the former Russian and Austrian governments with regard to transportation facilities in former Congress Poland and Galicia (in 1912 there were for each

1,000 square kilometers in former Congress Poland only 25.5 kilometers of railways; in Galicia only 52.3 kilometers, whereas in Belgium there were 160 kilometers, and in Germany 113). Now that the Polish territories are united, Polish industry, not being hindered by foreign governments, has many possibilities of quick development. To put her industry into operation she needs, however, coal, coal and once more coal, which can be supplied to her only by Upper Silesia. In other words, from whatever view one regards the coal question in Poland, one everywhere sees her dependency upon Upper Silesia.

Iron Industry

We will now take up the second most important branch of the Upper Silesian industry, namely the iron industry, and consider its position and possibilities of development in case Upper Silesia is left with Germany and also in case it is united with Poland.

In the year 1913 there were in Upper Silesia thirty-six blast furnaces, of which twenty-nine were in operation. These twenty-nine furnaces produced 994,601 tons of pig iron, using as raw material the following:

Sources of Raw Material for Iron Industry*

	Tons	Tons
Iron ore from Upper Silesia	178,958	
Iron ore from Posen	79,861	
Iron ore from abroad	576,028	
Iron ore from Germany	260,074	
		1,094,921
Manganese ore (imported into Germany from abroad)		47,965
Burnt pyrites, etc. (almost exclusively of foreign origin imported to Germany)		289,914
Scrap iron		7,587
Slag and Scales		
A—Upper Silesian	304,650	
B—German (including Posen)	124,625	
C—Other	154,815	
		584,090
		2,024,477

As seen from the above, Germany proper supplied to Upper Silesia only a limited quantity of raw material for smelting iron, about 19 per cent. of the total used. With regard to iron ores in particular, Germany delivered to Upper Silesia in 1913 about 25 per cent. of the total consumption, whereas the manganese ore was all imported from abroad, Upper Silesia herself was able to supply her meteorological industry a very insignificant quantity of ore. The reason for this is that the Upper Silesian ore mines are nearly exhausted. The production of iron ore in Upper Silesia has been decreasing for many years; in 1890, it amounted to 769,742 tons, in 1900 to 406,839 tons, in 1910 to 233,823 tons, and in 1913 to 138,204 tons, or only about one-sixth of the production in 1890.**

Thus the Upper Silesian iron industry has been forced to import most of the necessary ores from abroad, chiefly from Sweden and Norway. Before the war this importation did not meet with any difficulties, but now Sweden and Norway are among the countries with the highest exchange rates and the difference between the German currency and the Swedish or Norwegian currency will make it difficult for Germany to import ores from that source for a long time to come. A further great difficulty will be the lack of shipping facilities.

*Report of the Upper Silesian Mining and Metallurgical Industry.
**Handbook of Upper Silesian Industry.

The following table shows clearly how Upper Silesia became more and more dependent on imported ores:

Relative Importance of Imported Ores *

Total Consumption of Iron Ore in Upper Silesia Tons	Upper Silesia Per Cent. of Total Tons Consumption		Germany Per Cent. of Total Tons Consumption		Foreign Per Cent. of Total Tons Consumption	
1891.... 871,425	708,654	81.3	33,311	3.8	129,460	14.9
1895.... 902,109	604,272	67.0	34,584	3.8	263,253	29.2
1899.... 1,104,576	536,074	48.6	41,184	3.7	527,318	47.7
1903.... 1,028,446	420,629	40.9	55,041	5.4	552,776	53.7
1907.... 1,208,053	292,077	24.2	129,603	10.7	786,373	65.1
1911.... 1,120,213	251,682	22.5	155,253	13.8	713,278	63.7

The increase of the proportion of German ore used is particularly to be ascribed to Posnanian ore which is included in the German figure. The import of ore from Germany proper in 1915, as shown above, still further increased, but it must be noted that Germany had then in her possession very rich ore mines in Alsace-Lorraince which now belong to France, so that the supplying of Upper Silesia with German ore will be more difficult.

At the same time in Polish territories, in the near vicinity of Upper Silesia, there are very large deposits of iron ore which will be able to serve the Upper Silesian metallurgical industry in case Upper Silesia is united with Poland. Deposits of iron ore exist in all territories of Poland, the richest being in former Congress Poland. More exact investigations which have been made in the western part of Congress Poland show that there are deposits of iron ores estimated by Professor Bogdanowicz at 300,000,000 tons (by other experts still higher). It is true that this ore contains not more than thirty to forty per cent. of iron, but it smelts easily and when mixed with ore with a higher percentage of iron is an excellent raw material. The ore industry in Congress Poland was developing before the war under specially difficult conditions, as the export of Polish iron ore abroad was made impossible on account of prohibitions of export of iron ore from Russia by land. Notwithstanding this, the production of iron ore increased during the last pre-war years very considerably.

The following table shows the increase of the iron ore production in former Congress Poland.**

	Tons
1909	123,091
1910	167,065
1911	257,374
1912	294,114
1913	310,623

The increase from 1909 to 1913 was 187,532 tons, or 152 per cent.

If one compares this increase of production of iron ore in Congress Poland with the decrease of iron ore production in Upper Silesia, one sees at once that Poland is the logical source of supply for Upper Silesia.

As mentioned before, the production of pig iron in Upper Silesia amounted in 1913 to 994,601 tons. This production had been increasing during the last pre-war years very slowly. It amounted to:***

	Tons
1909	849,776
1910	901,366
1911	963,382
1912	1,048,356
1913	994,601

***Handbook of Upper Silesian Industry.**
****Mining and Metallurgical Indnstry in Congress Poland.**
*****Handbook of Upper Silesian Industry.**
Report of the Upper Silesian Mining and Metallurgical Industry.
Year Book of the Breslau Mining District.

From 1909 to 1913 the production therefore increased by only 144,825 tons, or 17 per cent.; from 1912 to 1913 the production even decreased by 53,755 tons, or 5.1 per cent. At the same time the total German production of pig iron increased from 12,917,653 tons in 1909 to 17,852,571 in 1912, and to 19,276,000 in 1913; that is from 1909 to 1913, or during a period in which the Upper Silesian pig iron production increased altogether only by 17 per cent., the total German production had increased by 6,358,000 tons, or by 50 per cent., and that from 1912 to 1913, Germany as a total shows an increase of 1,423,000 tons, or 7.97 per cent., whereas Upper Silesia shows a decrease of 5.1 per cent. On account of this the ratio of pig iron production in Upper Silesia to the total pig iron production in Germany, which has always been expressed by a very inconsiderable figure, has undergone during recent years a still further reduction. In 1871 the pig iron produced in Upper Silesia was 14.8 per cent. of the total pig iron production in Germany:

In 1891, 10.3 per cent.; 1901, 8.1 per cent.; 1910, 6.1 per cent.; 1911, 6.21 per cent.; 1912, 5.92 per cent.; 1913, 5.16 per cent.

If we consider now the data regarding the sale of pig iron and iron products, we shall find how small was the role of the Upper Silesian iron industry in supplying Germany's requirements, and how, on the other hand, the development of this industry depends upon its relations with other Polish territories.

In the following table is shown the production of pig iron in Upper Silesia and the shipments to points outside of Upper Silesia.

Iron Shipments from Upper Silesia *

	Production of Pig Iron	Railway Shipments to Points Outside of Upper Silesia	Per Cent. of Production.	Shipments Points Outside of Germany	Shipments to Polish Territories Belonging Formerly to Russia
	Tons	Tons		Tons	Tons
1884....	410,330	50,750	12.4	48,037	43,591
1886....	372,875	72,391	19.4	63,663	62,534
1887....	395,611	37,114	9.4	28,859	28,215
1891....	479,806	10,897	2.3	1,430	906
1901....	641,726	29,365	4.6	10,060	537
1911....	963,382	64,434	6.7	14,130	6,588
1912....	1,048,356	82,794	7.9	38,598	6,268
1913....	994,601	51,118	5.1	17,105	4,903

From the above figures it can be seen that in 1886 about 20 per cent. of the total production of pig iron was exported to points outside Upper Silesia, in 1913 only 5.1 per cent. This decrease parallels the decrease of the export to Polish territories belonging formerly to Russia. In 1886 the export of Upper Silesian pig iron to those territories amounted to more than the total shipments to points outside Upper Silesia in 1913. Evidently the Polish territories are the natural market for Upper Silesian pig iron. Through artificial means this market was closed to her in 1887. In this year, namely, Russia increased the duty on pig iron from six kopeks to thirty kopeks per 100 kilograms (from marks, 1.19, to marks, 5.95 per 100 kilograms). In the year 1891 there followed a further increase to 35 kopeks (marks, 6.94). From the moment when the Polish market was thus closed the importance of the Upper Silesian pig iron became only local and consequently the production of Upper Silesian pig iron, in proportion to the production of the whole of Germany, continually declined.

*German Government Report of Merchandise Shipments on German Railways.

With regard to finished manufactures of Upper Silesian iron factories the situation is similar, as shown by the following table:

Manufactured Products Exported by Upper Silesia *

	Total Railway Shipments of Iron Goods Including Shipments to Points Within Upper Silesia	Shipments Outside of Germany		Shipments to Polish Territories Belonging Formerly to Russia
	Tons	Tons	Per Cent.	Tons
1884.....	267,697	42,976	16.1	23,219
1895.....	485,563	135,913	28.0	105,251
1900.....	662,286	51,586	7.8	28,498
1911.....	1,271,206	80,393	6.3	6,678
1912.....	1,448,986	135,865	9.4	10,262
1913.....	1,396,303	117,241	8.4	22,587

Here also the expansion of the Upper Silesian industry was hindered through the closing of the Polish markets by Russian customs duties introduced in 1881, 1882, 1887 and 1891. The decrease of the customs duties in the year 1894, although by a small percentage only, made it possible for the Upper Silesian iron industry to increase, for a certain time, the export to Polish territories formerly under Russian rule.

From 1884 to 1911 the export from Upper Silesia increased from 42,976 tons to 80,393 tons, or by 87 per cent., whereas the total export from Germany of goods of the same kind increased during this period by 410 per cent.

For the interior German markets the Upper Silesian iron industry has only a very small significance. This industry has been able to control the market only in Upper Silesia. The iron requirements of that part of Silesia outside of Upper Silesia were supplied by Upper Silesia only to the extent of about 50 per cent, the requirements of Posen to not much over 33⅓ per cent., and the requirements of other markets even situated near to Upper Silesia, such as West Prussia, Pomerania, Saxony and Brandenburg, only in very small degree.

The importance of the Upper Silesian iron industry in supplying even these nearest markets has been constantly decreasing.

The consumption of Upper Silesian iron as compared with the total iron consumption was in per cent. as follows:

Drop in Consumption of Upper Silesian Iron Products**

	Silesia (Excl. Upper Silesia)	Posnania	West & East Prussia	Berlin	Brandenburg	Saxony
1884.....	63.7	44.7	20.8	19.7	15.6	16.6
1911.....	55.2	35.7	17.8	14.5	12.8	12.2

It must be added that in the above table not the total consumption of iron was taken into consideration, but only that of the iron products which were manufactured in Upper Silesia and transported by railway. If one should take into consideration the total consumption of iron in the above mentioned territories, one would, in view of the fact that Upper Silesia does not produce various kinds of iron products at all, and that those territories to a large extent used iron brought from Western Germany by waterways, find the picture for Upper Silesia still less favorable.

We see, therefore, that here also the figures speak for themselves. Apparently the economic conditions of Germany do not give to Upper Silesia's iron industry the same basis for development as to the industrial districts of Germany proper; on the contrary, the connection of Upper Silesia with

*German Government Report of Merchandise Shipments on German Railways.
**Handbook of Upper Silesian Industry.

Germany has rather hindered the development of the Upper Silesian iron industry. We will try to explain some of the reasons for this condition.

First of all, in geographical situation Upper Silesia belongs rather to Poland than to Germany. Located between Galicia and Congress Poland, the Upper Silesian manufactures had to move more than 100 kilometers, before they reached the nearest German markets. Now that Posnania and West Prussia have become a part of the Polish State, the situation of Upper Silesia, in case it should be left with Germany, would be still more unfavorable. Upper Silesia has no waterway connections with Germany except by the River Oder, which in its upper part is very unsuitable for navigation (on account of strong currents in spring and low water during the summer). The Upper Silesian products can therefore move by the chief waterway only to a very small extent. On the other hand, the chief industrial district of Germany proper in the Rhine provinces has at its disposition the splendid waterway of the Rhine, so that it can transport goods to the sea, and then, through Hamburg, Stettin and the river basins of the Elbe and Oder, to Eastern Germany comparatively cheaper than can Upper Silesia. For the same reasons Upper Silesia, if left with Germany, will be threatened by competition from German iron foundries situated on the Baltic, and even from the foreign iron industry.

The cost of producing iron in Upper Silesia is considerably higher than in the west of Germany, because the Upper Silesian coke is softer and is not as suitable for metallurgical purposes as the Westphalian coke. The blast furnaces in Upper Silesia must therefore be constructed of smaller dimensions than in the west of Germany. In 1910 the average production per furnace in Upper Sielsia was 31,100 tons of pig iron, whereas the average for the whole of Germany was 48,800 tons and for the Dusseldorf district 71,360 tons. To produce 1,000 tons of pig iron there were employed on the average in 1910 in Upper Silesia 5.4 workmen, in Germany as a whole 3.1 workmen and in the Dusseldorf district 2.7 workmen.*

Also with regard to the supply of ores the Western German metallurgical industry is in a better situation than the Upper Silesian industry, as it possesses its own ore mines (in the Rhineland), and has the possibility of importing iron ore by the cheap waterway.

Thanks to the good connections with seaports by waterways, the iron industry of Western Germany could develop its export, which became impossible for Upper Silesia from the moment Russia introduced prohibitive customs duties.

Because of the above reasons there has been practically no opportunity for the development of the Upper Silesian iron industry within the boundaries of Germany. As we have seen above, even in the nearest markets in Eastern Prussia the Upper Silesian industry has been forced into second place by the German competition. To hold these markets the Upper Silesian iron industry had to make heavy financial sacrifices, especially as the sale of the so-called by-products (rolled iron, pipes, sheet iron, etc.), has not been combined in Germany in one syndicate. For this reason the earnings of the companies engaged in the iron industry in Upper Silesia were before the war insignificant and many of them worked at a loss.

The fact that the condition of the iron industry in Upper Silesia was very serious was confirmed by competent authorities. The above mentioned handbook of the Upper Silesian industrial district mentions specifically the "very difficult situation of the iron industry in Upper Silesia" (page 433), and it must be noted that this handbook was edited by the Upper Silesian Mining and Metallurgical Association (the organization having the closest contact with the iron industry).

To what extent the Polish territories formerly under Russian rule are a natural market for the Upper Silesian iron industry is shown by the fact

*Handbook of Upper Silesian Industry.

that, after the Russian Government had created an artificial wall between Upper Silesia and those territories through the establishment of high customs taxes, the Upper Silesian industry broke through this wall. After the year 1880 a number of iron factories were created in Congress Poland, either directly by Upper Silesian companies as their branches, or in close contact with the Upper Silesian industry.

This expansion of the Upper Silesian iron industry to the east toward Polish territories proves that the leaders of the industry clearly see that the natural markets lie to the east.

The iron industry is developed in the territories now forming the Polish State only to a very inconsiderable extent. Blast furnaces are to be found only in Congress Poland. Their number amounted in 1913 to thirteen, of which eleven were operating. They produced in that year 418,708 tons of pig iron. The production of pig iron in Congress Poland since 1909 is shown by the following table:*

	Tons
1909	215,830
1910	250,827
1911	346,900
1912	392,548
1913	418,708

Thus from 1909 to 1913 the production increased by 202,878 tons, or 94 per cent. (the corresponding figure for Upper Silesia is 17 per cent.; for all Germany 50 per cent.).

A large number of blast furnaces and iron mills in Congress Poland were destroyed or considerably damaged during the war; but even if we should assume that it will be possible to reconstruct these mills in a short time (which under the present conditions is not possible), and even if their production should grow further in the same proportion as before the war, even then the production of iron works in territories forming the present Polish State would be quite insufficient to cover the interior requirements. Of all the Polish territories now united only Congress Poland has really a large iron industry, and this industry now has to supply the requirements of Galicia and of former German Poland, which obtained their supplies before the war, either in Bohemia and Austria, or in Upper Silesia and Western Germany. Congress Poland also has to meet the demands for iron of all the former Russian Poland, as apart from Congress Poland the Polish territories belonging formerly to Russia have no iron industry.

The iron requirements of Poland will probably grow much more rapidly than before the war. On account of the unfavorable economic situation in which the Polish territories were held under foreign governments, the consumption of iron per head of population before the war was very small.

It amounted yearly, in Congress Poland to 19.4 kilograms, in Posnania to 96 kilograms, in Western Prussia to 62 kilograms; whereas the corresponding figures were for the United States, 303 kilograms; Germany, 137 kilograms; England, 112 kilograms; France, 92 kilograms, and Belgium, 121 kilograms.

Iron Prices in Upper Silesia and Congress Poland

(In German marks for one ton, one rouble being calculated as marks, 2.16)

	Congress Poland	Upper Silesia
Pig iron	92	72-79
Commercial iron	176	120-130
Sheet iron	192	140

*Mining and Metallurgical Industry in Congress Poland.

The above figures show clearly how little the Polish market is saturated with iron, and what a field it offers for the Upper Silesian iron industry.

Enormous quantities of iron will be needed solely to bring the railways up to the Western European standard.

An interesting light on the more favorable market which Polish territories could have offered to Upper Silesia before the war is obtained by a comparison of iron prices in 1913 in Upper Silesia and in Congress Poland. (Page 16.)

From the above mentioned it follows that the Upper Silesian iron industry, similarly to the coal industry, is only connected with the economic life of Germany proper by very loose ties; the fact that Upper Silesia belonged to Germany, not only did not encourage the development, but, on the contrary, kept the development down, on account of the competition of Western Germany—and that the natural markets for this branch of the Upper Silesian industry are Polish territories which will be open for Upper Silesia when it is united with Poland.

Zinc Industry

The third most important industry in Upper Silesia is the zinc industry. It was principally an exporting industry, always in close touch with the Polish markets. Upper Silesia produced zinc as follows:

Zinc Production in Upper Silesia*

Year	Tons of Zinc
1881	67,000
1900	102,000
1907	138,000
1911	156,000
1912	168,496

Upper Silesia rolling mills worked approximately 30 to 40 per cent. of this into sheets, etc. The export by railways from Upper Silesia to points outside of Germany is shown by the following table:

Exports of Zinc from Upper Silesia**

Year	Railway shipments from Upper Silesia to points outside of Germany—Zinc and zinc goods	To Polish Territories Belonging Formerly to Russia	Percentages of Total Shipments to Points Outside of Germany
	Tons	Tons	
1887	15,270	167	1.1
1899	19,255	3,544	18.5
1907	30,328	5,902	19.5
1911	38,029	11,475	30.2
1912	36,839	8,024	22.
1913	39,937	14,462	36.2

Besides, certain quantities of zinc and zinc goods have been shipped from Upper Silesia to Galicia, namely, in 1911, 2,681 tons; in 1912, 4,156 tons; in 1913, 4,388 tons; to Posnania and Western Prussia, about 1,000 tons yearly. This percentage with regard to all the Polish territories is therefore still larger. In the year 1913 the now united Polish territories received from Upper Silesia 50 per cent. of the total Upper Silesian railway export of zinc and zinc goods.

In comparison to the world's production, the production of zinc in Upper Silesia has decreased during the recent years. This decrease is shown by

*German Government Report of Merchandise Shipments on German Railways.
**Handbook of Upper Silesian Industry.

the percentages of the world's production; from 25.4 per cent. in the year 1881 to 21.4 per cent in 1900, 18.7 per cent. in 1907 and 17.4 per cent in 1911.

The principal reason for this smaller development of the Upper Silesian zinc industry were: (1) the difficult sale conditions for sulphuric acid (one of the by-products of zinc), as the German markets were over saturated with sulphuric acid, and (2) high custom duties maintained by Russia for the Polish territories formerly under Russian rule. Upper Silesia when united with Poland will find there is a good market for sulphuric acid, which can be taken advantage of as the present production in Poland is much below the requirements.

No other branches of the Upper Silesian industries will be discussed in detail. It will only be mentioned that for nearly all the articles of these industries (by-products of the coking process of coal; artificial fertilizers—explosives for the mining industries, etc.), Poland offers an excellent market, as there are no such industries well developed in Poland.

In the same way as most of the industrial products of Upper Silesia have a natural market offered by Poland, and therefore such industry directs its expansion toward Poland, so also with regard to the supply of raw material and foodstuffs, Upper Silesia depends on Poland.

Raw Material and Food Imported from Poland to Upper Silesia

Iron ores have been mentioned above. With regard to the supply of wood, Upper Silesia depends entirely on Polish territories. Germany is quite unable to deliver to Upper Silesia sufficient wood. Forests in the Breslau and Lignitz districts are absorbed by the requirements of the cellulose industry, and other German forests are too far from Upper Silesia to be considered.

The following tables give details with regard to the origin of wood imported to Upper Silesia in the years 1911 to 1913, including the importation by railways to Upper Silesia of edged timber, finished wood, fuel wood and mining timbers:

Lumber Imports to Upper Silesia *

Year	Total	Out of This Quantity There Was Supplied by:				
		Congress Poland	Former Russian Poland Outside of Congress Poland	Galicia	Former German Poland	Total from Poland
	Tons	Tons	Tons	Tons	Tons	Tons
1911.....	504,694	107,206	39,213	215,107	6,986	368,512
1912.....	566,201	151,433	32,350	209,070	16,464	409,317
1913.....	640,656	149,311	36,599	259,497	32,457	477,644

NOTE—In this and in the following table regarding agricultural products and cattle, the importation from the whole former German provinces of Posnania and Western Prussia is included. Some very small quantities should be deducted for parts of those provinces which were left to Germany.

It must be mentioned that the importation of wood to Upper Silesia from points outside Germany has been hindered by rather high import taxes so that most probably the importation of wood from Polish territories would be still greater, if there were no artificial hindrances.

Regarding foodstuffs (agricultural products and cattle), Upper Silesia, to a large extent, has been depending on territories now forming the Polish State.

The temporary decrease of agricultural production in Poland has been

*German Government Report of Merchandise Shipments on German Railways. Commercial Balance of the Former German Poland (A. Rose).

primarily caused by the stopping of the importation of artificial fertilizers. If Upper Silesia is united with Poland, the requirements of Poland for artificial fertilizers will be covered by Upper Silesia, which has the largest factory of super-phosphates on the continent. Then the Polish agricultural production will regain its former level.

The importation by railway to Upper Silesia from points outside her boundaries of agricultural products, cattle and horses, was as follows:

Imports of Livestock and Food Products *

Year	Total	Out of This Quantity There Was Supplied by				
		Congress Poland	Russian Poland Outside Congress Poland	Galicia	Former German Poland	Total from Poland
WHEAT	Tons	Tons	Tons	Tons	Tons	Tons
1911.....	7,035	832	1,352	1,034	992	4,210
1912.....	9,468	150	615	2,314	1,243	4,322
RYE						
1911.....	34,422	786	2,646	6,486	14,518	24,436
1912.....	35,022	2,269	807	6,463	11,925	21,464
OATS						
1911.....	5,766	3,980	99	362	241	4,682
1912.....	4,689	217	14	827	1,980	3,038
BARLEY						
1911.....	26,039	5,284	4,319	9,923	322	19,848
1912.....	25,742	7,455	3,880	11,031	467	22,833
POTATOES						
1911.....	81,235	29,930	31,348	2,318	6,695	70,291
1912.....	91,368	35,464	32,963	732	9,594	78,773
FLOUR AND GRITS						
1911.....	46,572	12	—	41	19,832	19,915
1912.....	44,994	40	20	32	15,347	15,489
MILLETS AND LEGUMINOUS SEEDS (PULSES)						
1911.....	16,046	6,784	762	6,948	121	14,615
1912.....	12,554	6,416	1,102	3,591	161	11,270
HORSES (HEADS)						
1911.....	4,190	510	—	408	538	1,453
1912.....	4,677	518	973	145	1,043	2,679
SWINE AND SHEEP						
1911.....	168,317	88,043	—	—	57,845	145,888
1912.....	142,053	73,555	17,790	—	27,730	120,075
POULTRY (HEADS)						
1911.....	743,527	21,900	41,150	642,544	11,316	716,910
1912.....	314,760	1,983	122,685	167,840	4,912	297,400

Conclusion

It follows clearly that Upper Silesia and other Polish territories form an inseparable economic unit. These territories were before the war separated by customs lines. They belonged to different economic organisms. Notwithstanding this, they have, as herein shown, offered one to the other necessities of such a nature that there has been large interchange of goods in spite of political hindrances.

Poland, without the Upper Silesian coal and iron, will never be able to become independent in her economic life. Upper Silesia depends upon Poland for a supply of raw materials and food articles.

Germany is absolutely unable to give Upper Silesia what Poland can give her, viz.: markets for the Upper Silesian industrial products and raw materials for her industries. Upper Silesia and Poland will flourish only when they are united into one economic unit.

*German Government Report of Merchandise Shipments on German Railways. Commercial Balance of the Former German Poland (A. Rose).

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The Upper Silesian Plebiscite District

Upper Silesia, where a plebiscite will be held in the near future, is one of the richest coal and mineral regions in Europe. It embraces an area of approximately 5,000 square miles and has a population of about 2,200,000. According to reliable statistics, approximately 62 per cent. of the population is Polish.

The greatest wealth of the region is derived from the coal deposits. Important deposits of iron, zinc and lead have also been developed. The iron and steel industry, relying wholly on coal produced within the region, and on both imported and locally produced ores, has grown to large proportions.

Though primarily a mining and factory district, Upper Silesia is not without agricultural resources, and produces a considerable portion of the food needed for home consumption. Ethnographically, Upper Silesia has for centuries been strongly Polish, but in the matter of political associations its history has been varied, belonging at various periods to Poland, to Austria, and to Prussia.

Both Germany and Poland claim Upper Silesia. Germany bases her claim entirely on economic grounds, largely because of the German ownership of mines and property. Poland bases her claim on economic and racial grounds. To Germany the region means only a source of greater wealth, whereas to Poland it is essential to economic independence. Germany, for instance, received only 8.9 per cent. of her pre-war coal from Upper Silesia, while over 40 per cent. of Poland's coal supply came from the now disputed district.

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